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ABSTRACT

Using current right brain/left brain research, this paper develops a model that explains acting's underlying quality--the actor is both himself and the character. Part 1 presents (1) the background of the right brain/left brain theory, (2) studies showing that propositional communication is a left hemisphere function while affective communication is a right hemisphere function, and (3) a discussion of the model based on primary neuropsychological studies. Part 2 explores whether the model is compatible to acting theory by matching it to three established theorists (Grotowski, Stanislavski, and Brecht), and suggests that because it is compatible with their theories and useful in understanding their differences, it gains credibility. Part 3 assesses the model's usefulness in dealing with actors, particularly in teaching, by looking at the very different approaches of two important teachers of acting (Viola Spolin and Kristen Linklater), and illustrates how the model is useful for understanding both teachers and illuminating their differences. Part 4, the summary, suggests directions to take and questions to explore. Notes and a bibliography are appended. (EL)

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A Right Brain/Left Brain Model of Acting

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Part I of the paper develops a model which explains acting's underlying duality -- the actor is at once himself and the character. The model uses current right brain/left brain research. It is based on primary neuropsychological studies rather than secondary works and therefore is quite specific and detailed.

Parts II and III compare the theories of Stanislavski, Grotowski, Brecht, Spolin and Linklater with the model. The parallels tend to validate the model, and, incidentally, provide a fresh way of looking at these important figures.

Part IV is a summary and brief discussion of the model's effectiveness as a teaching tool.

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January 5, 1984

INTRODUCTION

Acting is a duality. It is being two persons at once. An actor does not just signify or depict a character, he truly becomes another person. Yet he remains himself. He is two realities in one. Dramatic theorists tend to find this a paradox and resort to metaphysics.[1] Actors -- from tyros to professionals who practice duality every day -- are less confounded by it, but no more precise in describing its source. Audiences can't explain it either, but they know it when they see it -- and they want it.

One possibility is that duality is intrinsic to human nature. The actor somehow uses the duality or gives in to it in performance. Dualism is plentiful in both Eastern and Western thought. There are many attractive lines of inquiry. But pursuing dualism on a metaphysical/philosophical plane could only satisfy theorists. It does not explain the day to day acting process. That needs a more concrete duality -- one that belongs not to the realm of aesthetics, but to performance. Of course aesthetics and performance are themselves part of a duality that ceases when the lights go up. What's really needed is a model for acting that begins with the process -- a bottom up rather than a top down theory.

The theory that the left and right hemispheres of the brain are specialized for some tasks offers such a possibility. The difference between the hemispheres -- both in general attributes and specific function -- suggest parallels with the acting duality. The neuropsychological research on hemisphere asymmetry is extensive enough to provide a good base and allow for

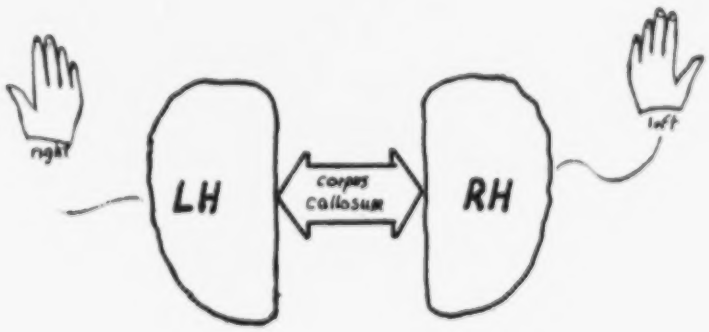
synthesis, and it has attracted attention in other areas of the Fine Arts, most notably Betty Edwards' Drawing on the Right Side of the Brain.[2] Her model is more than theory. It works. It is an effective way to teach people to draw.

The danger in posing such a model of acting is that it will be taken as a literal description of what the brain does. It is not. It can't be. No one knows how the brain works in life, no less in acting. At the same time, the model is not entirely metaphor. It is based on scientific research and thus has a more concrete base than metaphysics. Where along the road from science to metaphor this model lies depends on its usefulness in practice. That can be measured in part by its compatibility with current performance theory -- Part Two of this paper will essay that -- but its ultimate measure is its effectiveness as a teaching tool. Part Three discusses that.

PART I — RIGHT BRAIN/LEFT BRAIN MODEL

Background

Right brain/left brain theory starts with anatomy. The cerebrum -- the major brain structure and seat of our higher functions -- is comprised of two separate hemispheres, connected by a bundle of nerve fibers called the corpus callosum. The cerebral hemispheres have different functions. The left hemisphere controls the right side of the body, the right hemisphere the left side, for example.



The theory that the right and left hemispheres have different psychological functions began with research on split-brain subjects -- epileptics who had had their corpus callosum severed to reduce the severity of seizures. Although outwardly appearing normal, split-brain subjects exhibited strange behavior on certain experiments. They could not say the name of an object which they held out of sight in their left hand, but could name it if it was held out of sight

in their right hand. This suggested to researchers that verbal ability was localized in the left hemisphere. Ultimately, a variety of experimental techniques -- with split-brain, brain damaged, and normal subjects -- showed the brain is asymmetrical on a number of tasks, i.e. the tasks are lateralized to one hemisphere or the other. These tasks do not necessarily reside 100% in a single hemisphere, but they are clearly associated with it -- to the extent that if the hemisphere is inoperative entirely or in key areas, the task can't be performed.

Early interpretations of these asymmetries tended to emphasize differences in the hemispheres, and to generalize broad functional differences from rather narrow evidence. A dichotomania, as one scholar called it, prevailed. Recent interpretations tend to work from the premise that human behavior is integrated and therefore functional asymmetries are not at the root of all behavior. There is also more caution in construing evidence.

Below are categories of functions which recent secondary sources assign to one hemisphere or the other. These represent areas of general agreement:[3]

Left Hemisphere	Right Hemisphere
-Language skills	-Manipulo/visual/spatial skills
-Symbolic/sequential processing	-Simultanteous/holistic processing
-Verbal memory	-Image/pictorial memory

The functions in each hemisphere are related. Language is a symbolic, sequentially processed function that requires verbal memory. Holistic processing and image memory are needed for manipulo/visual/spatial skills.

The fact that these functions reside in a given hemisphere is of little importance unless they operate autonomously in some degree, i.e. the split must be behavioral. Experiments with split-brain subjects show that the hemispheres and associated functions do act autonomously. Inability to name unseen objects in the left hand is a simple illustration. Perhaps the most dramatic is the verbal left hemisphere's apparent need to reconcile the whole person's behavior. When allowed to view what they couldn't name in their left

hand, split-brain subjects often acted as if they knew all along, "Oh yeh -- a spoon."[4] The clearest example is one cited by Gazzaniga and LeDoux.[5] A split-brain subject was asked to match pictures of animals and tools, which were in full view of both hemispheres, with images presented to only one hemisphere. When a chicken claw was shown to the left hemisphere and a snowy sidewalk to the right hemisphere, the subject pointed to chicken and shovel pictures. The subject was then asked to explain his choices. He said, "I saw a claw and I picked the chicken," and without pause and with equal certainty, "and you have to clean out the chicken shed with a shovel." The left hemisphere seems to need a rationale, however spurious, for actions it observes in its nether side. More importantly, it is acting as an autonomous entity in doing that.

Gazzaniga and LeDoux cite experiments with a unique split-brain subject, P. S., a 15 year old boy who has some language ability in his right hemisphere.[6] His right hemisphere can't talk but can read simple sentences and spell out replies with Scrabble letters. When questioned independently, his two hemispheres sometimes agree on likes and dislikes, sometimes disagree. They express separate vocational aspirations. The left hemisphere wants to be a draftsman, the right hemisphere an auto race driver. Gazzaniga and LeDoux conclude that verbal ability may be necessary for consciousness.

The important question is whether hemisphere autonomy exists in normal subjects. The consensus seems to be that there is some degree of autonomy. The left hemisphere is regarded as the seat of conscious self-awareness. When we talk to ourselves, it is the left speaking -- and listening. Gazzaniga and LeDoux say the mind is not psychological so much as sociological, i.e. a society of consciousnesses with the left hemisphere in charge.[7] Springer endorses the notion of collaboration between the left hemisphere and the right hemisphere.[8] R. W. Sperry, the founder (and Nobel laureate) of split-brain/laterality studies, contends there are two separate consciousnesses.[9] Robert Frost's lines about marriage are a good summary, "...less than two but more than one...."

These generalized findings could form the basis for a model of acting. The acting duality could be based on hemispheric autonomy. The actor is two people

because he is using his two hemispheres differently. The left -- as the seat of self-consciousness or self-observation -- would be his source of control. The right -- because of its simultaneous, leap-of-intuition processing style -- would be the source for creating the character. But without more precise information on the hemisphere's functions, the model would be a rather featureless one. It needs the findings of specific studies to make it a sharper, more pointed, and more concrete model.

The Studies

The most important studies are the several that show that propositional communication is a left hemisphere function and affective communication is a right hemisphere function. Propositional communication is the lexical, grammatical, syntactical, articulatory aspects of speech and pantomime gesturing. Affective communication is the coloring, melody, and cadence of speech (prosody) that shows emotion. It also includes facial expression and emotional gesturing.[10]

Jakobson points to several studies, done primarily in the Soviet Union, which show the degree of specialization. The left hemisphere hears speech sounds, discriminates phonemes, and classifies them according to a complex hierarchy in order to hear meaning. The right hemisphere recognizes all non-speech sounds by a leap of recognition -- thunder, dog barks, etc. Subjects whose right hemisphere has been temporarily inactivated confuse the sounds of frogs and geese, laughter and crying, a pig and a Caterpillar tractor.[11] They also talk in monotones or portray the wrong emotional response to their own condition and misread the responses of others. Their comprehension of propositional elements is not impaired, however.[12] Subjects whose left hemisphere has been inactivated have their language virtually wiped out. At best they can understand simple, concrete nouns.[13]

The studies Jakobson cites involve inactivation of an entire hemisphere (via

electric shock or the anesthetic sodium amytal as part of a diagnostic procedure). Elliott Ross studied subjects with focal brain lesions, i.e. damage in specific areas. He found (and/or confirmed findings of previous studies) that damage to a specific area in the left hemisphere impaired the subject's ability to speak (motor aphasia) but did not affect comprehension of propositional speech. Damage to a different left hemisphere area reversed the effect. The subject could talk, but not understand others (sensory aphasia). More importantly, Ross discovered that the right hemisphere had a parallel organization. Damage to the corresponding areas in the right hemisphere produced inability either to project feeling (motor aprosodia) or read it in others (sensory aprosodia). The left hemisphere and right hemisphere tasks are different, but their anatomical organizations are the same.[14]

For actors, his most interesting finding is that the right hemisphere controls not just speech prosody but facial expression and emotional gesturing and movement. Subjects with motor aprosodia not only speak in a monotone, they have immobile mask-like features and produce few gestures. They can, however, read other's faces and movement.[15] They also <u>feel</u> the emotion. They just can't express it. Conversely, those with sensory aprosodia can't correctly read feeling in the voices, faces, or gestures of others, though they themselves can express feeling through all these means.[16] The right hemisphere is the actor's source of expression.

As might be suspected, the left hemisphere seems to control propositional gesturing, and pantomime of action, as well as propositional speech. Some left hemisphere damaged subjects can't recognize a pantomime of common acts -- shaving, writing with a pencil, etc.[17] Others can not put photographs of common actions, i.e. calling on a telephone, in proper sequence even though they can correctly manipulate simple objects.[18] Springer refers to left hemisphere damaged subjects who could not pantomime brushing their teeth even though they did it every morning as part of their habitual routine.[19] The left hemisphere is the actor's source for stage business and blocking (at least in the traditional sense) as well as lines.

Other studies confirm and extend the right hemisphere's role in mediating feeling. The left side of the face -- which is controlled by the right

hemisphere -- tends to show stronger emotion than the right side of the face -- contolled by the left hemisphere. This is true whether the expressions are simulated by moving muscles[20] or created more naturally by acting out a response to a hypothetical situation.[21] Regardless of acting style, the right is the source of emotional projection.

Right hemisphere damaged subjects do poorly compared to left hemisphere damaged and normals in attributing feelings to a character in a cartoon scene, e.g. a mother catching children marking walls.[22] In actor's terms, that means the right reads the emotional content of a scene as well as reading other characters. Interestingly, when the left hemisphere is given this task it too supplies a reading of the scene, but one that is inappropriate if not totally illogical. In a test with two similar cartoons, the right hemisphere labelled a figure with a gun pointing at him as being afraid and another figure being handed money as being pleased. The left hemisphere labelled both as fear, saying the man was worried the money was stolen.[23] One is reminded of the chicken and the shovel experiment.

The left hemisphere propositional vs. right hemisphere affective split is not necessarily true for all brain functions. Feelings don't originate in the right hemisphere, nor are the conceptual processes underlying speech exclusive to the left hemisphere. Schwartz et al, based on their review of the literature, say:

> In general, it seems ... the closer we get in the stages of production to vocal expression, the greater the influence of the specialized hemisphere.[24]

The key point for an acting model is that at the point of utterance, the moment of performance, the left/right split is important.

The split is important for an acting model to the degree it emerges in behavior. The split-brain subjects, particularly Gazzaniga and LeDoux's subject P. S., show that the hemispheres can have separate consciousnesses. Other studies have pointed to that as well. There is some indication that the two hemispheres will take contrary stands on aesthetic questions. If the left hemisphere picks one option, the right hemisphere will choose the other, and

vice-versa.[25] There is also indication that each hemisphere acts as a control or moderator of its skull mate. Jakobson mentions references to subjects becoming more talkative and using more complex constructions when their right hemisphere is inactive.[26] Ross mentions studies which seem to indicate hyperprosodia results from damage to the left hemisphere.[27]

These studies were done on split-brain or brain-damaged subjects. (Lateralized shock and soduim amytal procedures are only done as presurgical diagnostics on epileptic or brain damaged patients). They reinforce the more-than-one-less-than-two hypothesis but aren't conclusive for normal people. Because of the obvious difficulty in testing normals, there isn't much evidence for autonomy -- but there is some. Two studies show the right hemisphere to be the source of basic alertness. The first measured manual reaction times when a warning, "get ready" signal was presented to a single hemisphere. The fastest reactions were obtained by warning the right hemisphere and using the left hand (right hemisphere controlled). More interestingly, the right hand (left hemisphere controlled) reacted <u>faster</u> when the right rather than the left hemisphere was warned, even though the neural pathway is <u>less</u> direct with a right hemisphere warning than with a left.[28] The right hemisphere seems dominant on alertness. The other study involved laterally-presented matching tasks with verbal corrections. Hemispheres were presented two similar matching tasks -- one a right hemisphere preferred activity, the other a left hemisphere preferred. The subjects were instructed to say when they thought they made a wrong match. It was the latter that was being tested. The right hemisphere's correction rates were consistent for both tasks. The left hemisphere's were not. On its preferred task, the verbal correction was 93% accurate. On the non-preferred matching it was 58%. The left hemisphere's alertness is selective; the right hemisphere's is not. The most interesting result was coincidental. The task on which the left hemisphere had a poor correction rate was matching line drawings and photographs of emotional faces. The authors suggest this indicates that judging emotional expressions, which is a right hemisphere function, is disconnected (or at least can be disconnected) from left hemisphere self-awareness. They relate this to everyday occurrences when people are unaware they looked or sounded angry, for example.[29] That separation is obviously important to a model of acting. The actor's self-awareness, his

control can be independent of his ability to read the emotion in a scene or in other characters. His control can operate intermittantly, be on or off, while his alertness to the environment -- as well as other right hemisphere functions -- are always on.

If indeed the hemispheres can operate autonomously, they must have a working relationship, particularly a division of labor. A series of experiments by Hellige et al. suggest work sharing methods that are important to the actor.[30] To some extent, activation/attention determines which hemisphere will do a task. The left tends to do a right-preferred task (visuospatial processing) when it has been activated by a verbal memory task. But if the verbal memory task is large, the left hemisphere tends to let the right hemisphere do its preferred task. There is a parallel with acting. Actors who are learning lines tend to sound contrived, but once the part is learned, there is often a noticeable improvement.

The Model

The right hemisphere's role in mediating feelings must be the heart of the model. Ultimately, that is what an actor is -- a mediator who lifts the character's feelings off the page and transmits them to the audience. Using voice, face and body to portray feeling defines acting, and recognizing and responding to the emotional content of a scene is its most important practice. The right hemisphere is a born actor. But there are actors and there are actors. The acting duality depends on the actor becoming the character, not merely symbolizing him. Yet the right hemisphere mediates all feeling, whether it is a generalized, contrived pose or a response to circumstances. The key issue, then, is not the right hemisphere's mediation of feelings, but how those feelings evolve, i.e. where the right hemisphere gets its instructions.

Since acting requires that a character's feelings (and the action they motivate) be real, i.e. rise from the character's imagined environment rather than be generalized or symbolic, the studies seem to argue for right

hemisphere control in evolving feeling. It is the right hemisphere which reads the emotional content of scenes and other characters. Since the right is also the seat of basic environmental alertness, its control, or rather lack of it, would facilitate instinctive reaction to the imagined environment. Right hemisphere control is, in fact, a necessary part of the acting process, but it is not the most important issue.

The real issue is to keep the left hemisphere from taking charge. The left hemisphere is self-conscious. It analyzes behavior. It deals with things by describing them. It is clumsy and inept at reading feeling and emotional contexts. Its way of acting is to analytically determine emotion, look inward for a generalized version of it and turn that over to the right hemisphere to project. "She just met Prince Charming and it was love at first sight. She must be giddy and swoony and silly. Right hemisphere, act giddy and swoony and silly." That is not acting. Some call it performing, others indicating or signifying, but whatever it's called there is no duality. There is only the performer. If the right hemisphere is a born actor, the left hemisphere is a born ham.

The left hemisphere is hard to keep out of a right hemisphere controlled acting process. Being our self-awareness, it naturally intrudes, at least to the extent of watching actions, analyzing them, and imputing rationale. It does not seem to be daunted by its clumsiness relative to the right. It willingly insinuates itself between the right hemisphere's perception of the environment and its reaction to it -- right at the point of utterance, of performance, when laterality is most important.

In another sense, the left hemisphere is impossible to keep out. It is an integral part of the acting process. However much acting is the projecting of true feelings, it is nothing without lines and blocking, and the left hemisphere controls both. It controls the lines themselves and the sequence of their utterance, and it controls the sequential movement of the blocking. It is indispensable -- for that. The trick is to limit its impact on the right hemisphere process. The studies suggest this is possible. Verbal consciousness can be switched on and off. A disconnection between verbal consciousness and judging emotional faces is possible. The left and right hemispheres have

work-sharing methods.

At last we arrive at the duality. Acting is being two persons at once. An actor truly becomes another person, yet remains himself. He is both his left brain and his right. He reacts to his imagined circumstances and to his fellow characters, letting them determine his feeling and subsequent actions. He does this by non-analytical alertness, perceiving and doing as the character would in life. He does that with his right brain. At the same time he is himself, remembering and saying his lines and following his blocking, in control of his performance and through it his character. He does that with his left brain. And that is the heart of the duality — the delicate balancing of actor and character, of hemisphere moderating hemisphere, the one's need for control balancing the other's need for freedom, always more than one, always less than two.

* * * * * * *

While it is the nature of models to be cousins rather than sons of the evidence, this one is a close relation in most respects. The least direct tie is in the differing consciousnesses of the left and right hemispheres. For one thing the right hemisphere is harder to describe than the left in all respects, but particularly in consciousness. It might be better to talk about left-hemisphere and not-left-hemisphere processes and functions, and the environmentally alert, outward looking consciousness attributed to the right is potentially a conglomeration of mechanisms and structures unrelated to the left.

While the two styles of consciousness are only suggested by the studies, they are not original ideas. John Shotter derived the same two styles in his attempt to define consciousness descriptively, i.e. what consciousness looks like from internal observation. He postulates:

1. A verbal, social, conscious self which needs

> language to attain its ends and can only operate within the confines of language. What it knows is limited to what it can describe linguistically. What it does is limited to what it can justify linguistically.
>
> 2. An unconscious self, perhaps better described as actions outside the control of the verbal self. Some of these actions are difficult or impossible to verbalize, yet are appropriate to circumstances/the environment. The verbal self sits back and watches this unconscious self/actions and attributes rationales where it can.[31]

Shotter cites Gallwey's The Inner Game of Tennis as a source.[32] Gallwey believes to play well one must release verbal, thinking control and let oneself be taken over by a total tennis playing entity or machine that reacts moment by moment to game circumstances. Shotter points to a similar example with jazz pianists who watch themselves be a "jazz-playing I," watch their hands playing the music.[32A]

Shotter does not discuss laterality or in any way attribute the two selves to brain structures, but his descriptions are certainly compatible with the studies, particularly his verbal self. I take this as corroboration for my characterizations of the left and right consciousness in the model. They are extrapolations to be sure, but not unreasonable or unprecedented ones.

The actor shares his duality with an audience. They see him both as actor and as character, as two realities in one. The duality they see can be explained by the right brain/ left brain model. The audience reads and responds to the emotional context of a scene with the right hemisphere. They read the individual characters in the same way. On that level the on-stage emotion and characters are real. That reality happens only if the actors are reading and responding to each other in a right hemishere mode. Actors under control of their left hemisphere read false to the audience's right hemispheres in the same way that people who are faking it in real life do. The duality can only

exist if there is a right hemisphere connection all around -- actor to actor and actor to audience. The other half of the audience duality comes from the left hemisphere's awareness of itself at a play. The left hemisphere also follows what is going on, giving the audience a framework in which to place their right hemisphere responses.

Like the actor, the audience must balance the influence of the two hemispheres. If the left takes charge, they lose "willing suspension of disbelief." If the right has charge, they are lost in emotional chaos. The audience's ability to achieve balance is a direct result of the actor's ability to do the same, and the audience's proportion of left and right reflects the actor's. The more the actor achieves right hemisphere responses to each moment, the more the audience will be involved and empathetic. The more the actor's left hemisphere takes charge, the more the audience will separate itself from the action and be critical and analytical. The actor's duality is also the audience's, and the duality itself is a double and seeks its own balance.

The model is solid, if not seamless. It is pointed enough to be a useful tool in understanding the acting duality. It is concrete, not theoretical. The next step is to see how closely it fits, how much it explains established acting theory.

PART II — THE MODEL AND ACTING THEORY

Matching the model to established acting theory is a form of validation. The theorists are established because they are on to something. Their theories work. If the model is compatible with the theory, it gains credibility. It also gains usefulness as an alternate vocabulary for describing the theory. The model is intended to be a practical not a theoretical one, so I've chosen performance oriented theorists. The right brain/left brain duality is also a spectrum, from nearly all right to nearly all left brain acting. That seems to correspond to a spectrum in acting theory that runs from very spontaneous/improvisational to very controlled/intellectual. The three theorists I've choosen are from the ends as well as the middle of that spectrum. I've limited the number to three, because this is not a survey of acting theory. For that reason also, I've limited discussion to the essential points of their theories. The three are Grotowski on the spontaneous end, Stanislavski (Moore) in the middle, and Brecht on the intellectual end.

Grotowski

Grotowski is first because he is the most practical. His principles are common ground derived from research on the methods of individual actors. He is not a theorist, or an anti-theorist. He is interested in what works. He is also first because the model fits so well.

Grotowski's principles are subtractive. He removes blocks to an actor's true impulse. There are two blocks — the mask the actor wears in life/ his mind, and the limitations of his body. While Grotowski's work with actors is focused

almost exclusively on physical and vocal training, he is not increasing the actor's skills -- like training a gymnast -- but rather he's breaking down mental and physical barriers. It is important to see past Grotowski's exercises. They are means to an end. He uses them, not for any scientific or theoretical reason, but because they help "eliminate from the creative process the resistance and obstacles caused by one's own organism, both physical and psychic (the two forming a whole)."[33]

Grotowski's descriptions of the actor's barrier and the state the actor should achieve identifies them respectively as the self-conscious left hemisphere and the unself-consciousness of the right:

> ...we strip ourselves and touch an extraordinary intimate layer, exposing it, the life-mask cracks and falls away.[34]
>
> Often you must be totally exhausted in order to break down the mind's resistance and begin to act with truth.[35]
>
> ...the actor...is in a state of idle readiness, a passive availability which makes possible an active acting score.[36]
>
> But in order to get the result -- and this is the paradox -- you must not look for it. If you look for it you will block the natural creative process. In looking only the brain works; the mind imposes solutions....[37]
>
> What will unblock the natural and integral possibilities? To act -- that is to react -- not conduct the process.... This internal passivity gives the actor the chance to be taken. If one begins too early to conduct the work, then the process is blocked.[38]

Grotowski's principles say, in essence, that the actor must avoid the subtle intervention of the left, which can occur just at the moment of performance, and let right hemisphere impulse lead directly to action. He looks for:

> ...freedom from the time-lapse between inner impulse and outer reaction....Impulse and action are concurrent.[39]
>
> ...reflexes [produced] so quickly that thought -- which would remove all spontaneity -- has no time to intervene.[40]

The impulses come from "contact" with fellow actors. The actor reads the other characters and reacts without evaluation:

> On the stage we often detect a lack of harmony because the actors don't listen to their partners. The problem is not to listen and ask oneself what the intonation is, only to listen and answer.[41]

Actors must follow their right hemisphere's reading without evaluation.

While this right-hemisphere style of control produces truthful actions, it will lead to "biological chaos" without some form of control.[42] For Grotowski, control is the actor's 'score,' which is the pattern of 'contacts' dictated by the script, i.e. "clearly defined text and action."[43] In the model's terms, the left hemisphere controls by dictating the lines to say and the action. Note that for Grotowski the control stops there. The way the lines are played and action taken depend on contact and the impulses it generates. Those are different each time:

> In these somewhat intimate human encounters there is always this element of "give and take." The process is repeated, but always hic et nunc: that is to say it is never quite the same.[44]

Like the model, Grotowski's principles are a duality. He wants to remove the influence of (left hemisphere) thought/mind on a (right hemisphere) process that generates action spontaneously from contact with other actors. Yet the spontaneity must have bounds. These are the score -- the lines and sequence of action implied in the lines (and left hemisphere controlled).

Grotowski's principles also suggest the right brain/ left brain model of actor/ audience interaction. The result of the actor's processes he describes are signs (not symbols) that the audience reads:

> Often we can see, during the play, things we do not understand but which we perceive and feel. In other words, I know what it is I feel. I cannot define it but I know what it is. It is nothing to do with the mind; it affects other associations, other parts of the body. But if I perceive, it means that there was a sign. The test of a true impulse [on the actor's part] is whether I believe it or not.[45]

Grotowski is pointing to the audience's right hemisphere recognition and response to the actor.

Stanislavski

For manageability sake, I've used Sonia Moore's The Stanislavski System rather than the words of the master himself. Hers is a reasonable, popular synopsis and, as a test of the model, adequate.

Much of Grotowski is an extension of Stanislavski's principles. It's not surprising that the same general correspondences with the model exist. Stanislavski wished to turn on the subconscious:

> Stanislavski [had the] idea that the subconscious -- the uncontrolled complex of emotions -- is not altogether unapproachable, and that there must be a kind of key[46] which would intentionally "turn on" this inner mechanism.
>
> Stanislavski experimented with various 'conscious means to the subconscious."[47]
>
> The Stanislavski terms "conscious" and "subconscious" are really "controlled" and "uncontolled."[48]

The state he was seeking is the unselfconsciousness of the right hemisphere, but where Grotowski reached it by removing the influence of the left hemisphere, Stanislavski used the powers of the left to achieve it.

Stanislavski's system used physical action or behavior to trigger emotion:

> Paths of nerves connect our physical actions with the inner mechanisms of emotions and the innumerable nuances of human experience.[49]

The behavior is not consciously controlled. It is a reaction to the actor's environment, including other characters. Stanislavski called this the "given circumstances."

> The actor must become so familiar with the environment of the play that he becomes part of it. The nuances and the color of the action will depend on the circumstances which provoke it.[50]

The environment is imagined:

> ...the imagination plays a dominant role in the actor's task of transforming the story of the play into an artistic, scenic reality....[51]

Interaction with other characters is a key element:

> The actor depends upon the onstage events -- conflicts, sympathies, antipathies and other relationships among the characters.[52]

> ...the actor...must see images and transmit them to his fellow actors and through active transmission of his lines an actor will impress on his fellow actor what he wants him to see and hear...[and] will be "carried away" by the experience of the character he portrays.[53]

This process leads to a special state Stanislavski called 'public solitude,' a circle of concentration centered on the moment. In the model's terms, the process activates right hemisphere control.

Stanislavski's system involves the left hemisphere extensively. It calls for step by step analysis of the character's motives and feelings to discover the logic that propels the character through the play (the character's through-line).

> The correct definition of actions for each character will be determined not by the intuition of an actor but by his deep analysis of the intention of the author and by his own ability to choose that which is most characteristic and typical to the character....Stanislavski attributed enormous importance to the verbal determination of actions, because such definition forces an actor to think and to study the role and the play.[54]

The left-oriented analysis is homework, done before the acting begins. The latter, as with Grotowski, is inspirational.

> The Stanislavski formula "Today, here, now" makes every performance different, when every gesture, intonation and facial expression will be fresh.
>
> He demanded that the actor create anew at each performance the live organic process after carefully studying and developing the character's logic of action.[55]

Stanislavski's actor controls his performance by his homework. He packs himself so full of the character's baggage — his biography and relationships and moment by moment motivation — that even the actor's wildest flights of fancy are grounded on the play. And the baggage is not a burden. It is liberating. The actor knows, is the character so thoroughly that when he walks on stage he can do anything he wishes. He is totally free.

The Stanislavski system is not a balancing of control. It is a division of labor — the left hemisphere does the homework, the right hemisphere does the acting. That is not strict work-by-rule of course. The homework needs imagination and that suggests a role for the right, and the model shows that acting is impossible without the left.

Stanislavski's theories support the model's extension to the actor/audience relationship. He says of his style of acting,

> Only such art can completely absorb the spectator and make him both understand and also inwardly experience the happenings on the stage ....[56]

He is talking about both a left hemisphere "understanding" and a right hemisphere "inward experience," both a conscious and an unconscious reaction in the audience.

Brecht

Brecht starts with the audience rather than the actor. His theories are more aesthetics than how-to. His aim is to instruct, to cause social change, so he wants an audience primed to receive:

> I want to take the princple that it was not just a matter of interpreting the world, but of changing it, and apply that to the theater.[57]

To achieve that, the audience must retain their intellectually critical

facilities, their analytic ability, and not be lost in emotion and empathy.[58]

> We need to get right away from the old naturalistic school of acting ... with its large emotions.[59]

At the same time, he recognized that a completely intellectual, didactic approach would not engage the audience or keep their interest:[60]

> It is a frequently recurring mistake to suppose that this -- epic -- kind of production simply does without all emotional effects: actually, emotions are only clarified in it, steering clear of subconscious origins and carrying nobody away.[61]

In the balance of right and left hemisphere control in the audience, Brecht clearly favors more left, but not completely so — that would be uninvolving and unconvincing:

> The essential point of epic theater is perhaps that it appeals less to the feelings than to the spectator's reason .... At the same time it would be quite wrong to try and deny emotion to this kind of theater. It would be much the same thing as trying to deny emotion to modern science.[62]

To achieve more left than right control in the audience, Brecht strives for a similar balance in his actors. He recognizes the double duality of the model:

> [The actor] has just to show the character, or rather he has to do more than just get into it. This does not mean that if he is playing passionate parts he must himself remain cold. It is only that his feelings must not at the bottom be those of the character, so that the audience's may not at the bottom be those of the character either.[63]

Brecht wants distance between actor and character. His favorite metaphors are dealing with the character in the third person, acting as if the character were in the past, "saying" what the character is doing.[64] He says actors should emphasize action rather than character.[65] The actor "expresses his awareness of being watched" by the audience.[66] Brecht is describing left hemisphere control, with its self-consciousness, temporal/sequential sense, and propositional communication. Brecht also suggests techniques that minimize right hemisphere control. The actor should be conscious and not "go into a trance"[67] The actor should know how the play ends and not just live the

character moment by moment.[68]

Brecht recognizes that the actor must not be entirely under left hemisphere control. Acting is not to be "purely technical and more or less inhuman," because the actor is not totally transformed.[69]

> The alienation effect does not in any way demand an unnatural way of acting. It has nothing whatever to do with ordinary stylization. On the contrary, the achievement of an A-effect absolutely depends on lightness and naturalness in performance.[70]

He recognizes the need for contact between actors and reading and reacting to fellow actors without analysis. The actor should take lines served him like a tennis ball, "catching the tone and passing it on, so that rhythms and cadences develop which run through entire scenes." He wanted an ensemble team work. The actor should not perform "entirely for himself, beginning each remark afresh and simply annulling the preceding remark by his partner."[71]

The balance of the Brechtian actor serves the needs of the audience, and it is a more left hemisphere oriented balance than either Grotowski or Stanislavski, but it is a balance none-the-less.

Conclusion

The discussion of Grotowski, Stanislavski, and Brecht is not intended as a thorough analysis of their theories in light of the right brain/left brain model. That is three separate papers. Nor are the three more than representative acting theorists. Yet they are important enough and widely enough separated in their views to suggest that the model is a useful tool in understanding acting theory. And because it is compatible with their theories and even useful in understanding their differences, it gains credibility.

PART III — THE MODEL AND TEACHING

The ultimate test of the model is its usefulness in dealing with actors, particularily in teaching. One way to assess that is to look at the approaches of widely separated, important teachers of acting. As with the theorists, if the model is compatible with the teacher's work and helps explain it, it gains credibility. The teachers could be lumped with the theorists. I've choosen not to because they would lose in the lumping, and because they really are teachers, not theorists.

The two are Viola Spolin, and Kristen Linklater -- Viola Spolin because she is so important, and Linklater because she is an unlikely candidate, being primarily thought a vocal teacher.

Viola Spolin

Spolin's theater games aim at spontaneity which frees intuition and allows students to experience and grow.[72] To achieve spontaneity, she attempts to avoid verbal, intellectual, rationale mind sets -- what we would call left hemisphere control. This is the key to her approach.

She emphasizes "showing," letting the audience see what is happening rather than "telling," demonstrating, story-telling, i.e. propositional communication. She avoids discussion, talk, and labels:

> Verbalizing becomes an abstraction from total organic response and is used in place of contact to obscure the self.[75]

> ... imposing a label before its organic meaning is fully understood prevents direct experiencing .... A label is static and prevents process.[76]

> The explosion does not take place when invention is merely cerebral and therefore only a part or abstraction of our total selves.[77]

Implicit is the concept that our verbal selves are only part of us, are not our "total self." She recognizes and wants to tap the potentials of the right hemisphere.

She recognizes that the left hemisphere wants control and resists giving it up:

> Sometimes resistance ... shows itself in a great deal of verbalizing, erudition, argument, and questioning as to "how to do it?"[76]

Her solution is to keep it occupied with the "Point of Concentration" (POC), which is the object of the games:

> Occupied with the POC, the student-actor moves unhesitatingly to anything that presents itself. He is caught unaware, so to speak, and functions without fear or resistance.[77]

> The POC is the magical focus that preoccupies and blanks the mind (the known), cleans the slate and acts as a plumb-bob into our own very centers (the intuitive).[78]

The POC is the improvisers "through-line" and with the who, where, and what of the improvisation, it occupies the player's left hemisphere/ self-awareness/ consciousness and gives it sufficient control so the player's right hemisphere/ spontaneity can operate. She follows Stanislavski's strategy.

She recognizes the left hemisphere's response to a judgmental, competitive atmosphere (see Gallwey's Self 1) and structures the environment to avoid that:

> When competition and comparisons run high, the student ... bent on proving himself, is constantly watching and judging himself and moves nowhere .... He fights for status by tearing another person down, develops defensive attitudes (giving detailed "reasons for the simplest action, bragging,

or blaming others for what he does)."[79]

With beginners, she concentrates on physical, non-verbal exercises and games to minimize left hemisphere involvement and to awaken the right:

> Our first concern with students is to encourage freedom of physical expression, because the physical and sensory relationship with the art form opens the door for insight. Why this is so is hard to say, but be certain that it is so. It keeps the actor in an evolving world of direct perception -- an open self in relation to the world around him.[80]

She is doing more than avoiding the left hemisphere's province, she is appealling to the right's spatial abilities:

> The player learns that a stage reality must have space, texture, depth, and substance -- in short, physical reality. It is his creating this reality out of nothing, so to speak, that makes it possible for him to take his first step into the beyond.[81]

Her goal in removing the influence of the left and taping the right is "openness to contact with the environment and each other," in the same way we do in everyday life:

> Everyone ad-libs every waking hour of the day and responds to the world through his senses. It is the enriching, restructuring, and integration of all of these daily life responses for use in the art form that makes up the training of the actor for scene improvisation and formal theater.[82]

She is hoping to emulate the natural left/right balance of everyday life.

Kristen Linklater

Linklater works with the voice, but not propositional speech. Her end is not a beautiful voice, but an actor in complete emotional touch with the text. She wants a "voice in direct contact with emotional impulse." She seeks to capitalize on the right hemisphere's role in emotional mediation.[83]

Language, she says, evolved from primitive roars of anger, cries of ecstacy, and mouth functions -- lick, suck, snarl, chew, kiss. It has direct connections to "emotive storehouses in the body." The evolving intellect gradually took control over these connections in an effort to refine communication.[84] The intellect restrains spontaneous emotive speech. It is protective. It wants time to think:

> ... Neuro-muscular programming has developed habits of mind and muscle that cut us off from the instinctual connection between emotion and breath.[85]
>
> ... the complex facial musculature ... responds to inhibitary messages from the mind by drawing a curtain across the window of the the face.[86]

She is obviously talking about the left hemisphere.

Instead of letting the left hemisphere interpose itself between emotion and response, she wants a direct, natural connection between feeling and voice. The actor must "allow the text access to those depths and let it play on [him]."[87] This is particularly true in speaking verse:

> With poetry, what is being said cannot be discovered by the brain alone .... Poetry is understood through the mind, heart, spirit and the viscera: ways of absorbing a text into all those areas must be available."[88]

Her first step in text work is non-intellectual, a search for images, feelings, rhythms, sensory data in the verse, totally ignoring its propositional meaning. The latter is used to make choices from the material garnered in the first step. The intellect orders the chaos of step one.[89] The process is like Grotowski's.

She is after the same right brain/left brain work sharing that the model contemplates and that others discussed earlier want to achieve:

> The attitude toward speaking in this book, illustrates the relationship between emotion, instinctive impusle, sensory response, physical and vocal action. This working picture is completed by an intellect which molds all that into shapes that have sense and meaning. It is a formidable task and intellect has a poweful responsibility if it is not either to be drowned in emotion or to rise up in self defense and

> stifle anarchic impulses. Instead, it must channel impulse, emotion, sensation and sound with a brain power that offers equal partnership rights in the speaking process.[30]

She is more than a voice coach. She is an acting teacher who begins verbally, who strenghens the right hemisphere's emotional mediation to make it an equal partner with the left.

Conclusion

Although they come at the acting process from very different perspectives, Spolin and Linklater are after the same thing. They even sound alike talking about their different processes. The right brain/left brain model explains how that can be. Again it is useful in understanding both teachers and illuminating their differences.

PART IV — SUMMARY

This paper intends to propose the model in sufficient, credible details, not to explore all its implications or inadequacies. There are many directions to look, questions to ask. I take that as a strength. The model is not a clever analogy, a polished surface. It is a spade for excavating the foundations of performance. Directions and questions to explore follow:

§The model makes reference to imagined circumstances which the actor creates and reacts to. None of the studies I found addressed laterality and imagination. This part of the model is unsupported. That is a weakness, but not a fatal one. A reasonable argument exists for right hemisphere involvement based on visual memory and the non-verbal nature of an imagined environment. Similarly, left hemisphere logic seems necessary for the initial postulate -- what Stanislavski calls the "magic IF."

§All reactions on stage (or off) are not emotional, i.e. reacting to or showing feelings. Some are verbal, for example. How does the model explain those?

§What are the left hemisphere's mechanisms of control over the right? How does left hemisphere analysis (a la Stanislavski) feed or control or do whatever to the right hemisphere? Answers to these questions are proably beyond current neuro-psychological research.

§Each of the theorists discussed, and others, should be

examined in detail using the model.

Besides answering theoretical questions, the model has potential as a practical teaching tool. My own experience with it in the classroom (two years of a single semester beginning acting course) bears this out. The two most useful series of exercises (based on student evaluations) have right brain/left brain overtones.

The mask acting exercises seemed to help students access the right hemisphere. They reported feelings of detachment, separation between their self-conscious selves and the mask persona, and they felt liberated by the mask. These are not uncommon responses to mask work, but the theory explains them. The students learned strategies for controlling the mask persona without interrupting its spontaneous behavior, i.e. they practiced the balancing of left and right control. Their means of control was manipulating the given circumstances. The best example was the mask that refused to help others and insisted on supervising. The actor was able to get the mask to pitch in by pretending it was a spy looking for laggards.

The hidden-relationship improvisations accomplished the same things. Spolin calls these the "Who Game:" A is on stage. B decides on a relationship with A but doesn't tell him. A must figure out who he is while improvising the scene with B.[91] The exercise forces a separation between right and left modes. A must spontaneously read and react to B. At the same time he must analyze the situation and deduce the relationship. The students reported a clear separation between reacting and analyzing and found the exercises liberating.

There are too many studies correlating teaching success with teacher expectation to say these experiences prove that the theory works. But the theory does offer an explanation for their success and therefore a basis for selecting other exercises.

NOTES

[1] Julian Olf, "Acting and Being: Some Thoughts about Metaphysics and Modern Performance Theory," Theater Journal, March, 1981, pp. 34-45.

[2] Betty Edwards, Drawing on the Right Side of the Brain (Los Angeles: J.P. Thatcher, 1979).

[3] M. P. Bryden, Laterality: Functional Asymmetry in the Intact Brain (New York: Academic Press, 1982); M. S. Gazzaniga and J. E. LeDoux, The Integrated Mind (New York and London: Plenum Press, 1978); Roman Jakobson, Brain and Language: Cerebral Hemispheres and Linguistic Structure in Mutual Light (Columbus, Ohio: Slavica Publishers, 1980); Sally Springer and Georg Deutch, Left Brain, Right Brain (San Francisco: W. H. Freeman and Co., 1981).

[4] Springer, p. 33.

[5] Gazznaniga and LeDoux, p. 148

[6] Ibid., pp. 142-5.

[7] Ibid., p. 15.

[8] Springer, p. 193.

[9] Ibid., p. 6.

[10] Elliott Ross, "Dominant Language Functions of the Right Hemisphere? Prosody and Emotional Gesturing," Archives of Neurology 36 (1979), 144-48.

[11] Jakobson, pp. 20-22.

[12] Ibid. pp. 23-24.

[13] Ibid. p. 29.

[14] Elliott Ross, "The Aprosodias: Functional-Anatomic Organization of the Affective Components of Language in the Right Hemisphere," Archives of Neurology 38 (1981), 561-69.

[15] Ross, "Dominant,"

[16] Ross, "Aprosodias,"

[17] N. R. Varney, "Pantomime Recognition in Aphasia: Implications for a Concept of Asymbolia," Brain and Language, 15 (1982), 32-39.

[18] G. Lehmkuhl and K. Poeck, "A Disturbance in the Conceptual Organization of Actions in Patients with Ideational Apraxia," Cortex, 17 (1981), 153-8.

[19] Springer, p. 12.

[20] Sackheim et al., "Emotions are Expressed More Intensely on the Left Side of the Face," Science, October, 1978, pp. 434-5.

[21] Joan Borod, "Facedness and Emotion Related to Lateral Dominance, Sex and Expression Type," Neuropsychologia, 18 (1980) 237-41.

[22] Dekosky et al., "Recognition and Discrimination of Emotional Faces and Pictures," Brain and Language, 9 (1980), 206-214.

[23] Cicone et al., "Sensitivity to Emotional Expressions and Situations in Organic Patients," Cortex, 16 (1978), 145-158.

[24] Schwartz et al., "Dissociations of Language Function in Dementia: A Case Study," Brain and Language, 7 (1979), 277-306.

[25] Claude Chemtob, "Paradoxical Complementarity in the Aesthetic Preferences of the Cerebral Hemispheres: An Exploratory Study," Perceptual and Motor Skills, 48 (1969), 799-806.

[26] Jakobson, p. 34.

[27] Ross, "Dominant."

[28] Heilman et al., "Right Hemisphere Dominance for Mediation Cerebral Activation," Neuropsychologia, 17 (1979), 311-315.

[29] Landis et al., "Dissociated Awareness of Manual Performance on Two Different Visual Associative Tasks: A 'Split-Brain' Phenomenon in Normal Subjects," Cortex, 17 (1981), 435-440.

[30] Hellige et al., "Information Processing in the Cerebral Hemispheres: Selective Hemisphere Activation and Capacity Limitations," Journal of Experimental Psychology: General, 108 (1979), 251-79.

[31] John Shotter, "Consciousness, Self-Consciousness, Inner Games and Alternate Realities," Aspects of Consciousness, Vol. 3, Underwood and Stevens, eds. (New York: Academic Press, 1982), p. 48-50.

[32] W. Timothy Gallwey, The Inner Game of Tennis (New York: Random House, 1974).

[32A] Shotter, p. 43.

[33] Jerzy Grotowski, Towards a Poor Theater (New York: Simon & Schuster/Touchstone, 1968), p. 128.

[34] Ibid., p. 23.

[35] Ibid., p. 238.

[36] Ibid., p. 37.

[37] Ibid., p. 245.

[38] Ibid., p. 249..

[39] Ibid., p. 16.

[40] Ibid., p. 35.

[41] Ibid., p. 227.

[42] Ibid., p. 39.

[43] Ibid., p. 227.

[44] Ibid., p. 212.

[45] Ibid., p. 235.

[46] Sonia Moore, The Stanislavski System: The Professional Training of An Actor (New York: Penguin Books, 1976), p. 12.

[47] Ibid.

[48] Ibid., p. 13.

[49] Ibid., p. 23.

[50] Ibid., p. 29.

[51] Ibid., p. 30.

[52] Ibid., p. 40.

[53] Ibid., p. 41.

[54] Ibid., p. 67.

[55] Ibid., p. 79.

[56] Constantin Stanislavski, An Actor Prepares, trans. Elizabeth Reynolds Hapgood (New York: Theater Arts Books, 1936).

[57] Bertolt Brecht, Brecht on Theater: The Development of An Aesthetic, ed. and trans. John Willett (New York: Hill and Wang, 1964), p. 248.

[58] Ibid., p. 91.

[59] Ibid., p. 68.

[60] Ibid., pp. 69-77.

[61] Ibid., p. 88.

[62] Ibid., p. 23.

[63] Ibid., p. 193.

[64] Ibid., p. 138.

[65] Ibid., p. 27.

[66] Ibid., p. 92.

[67] Ibid., p. 26.

[68] Ibid., p. 194.

[69] Ibid., p. 253.

[70] Ibid., p. 95.

[71] Ibid., p. 244.

[72] Viola Spolin, Improvisation for the Theater: A Handbook of Teaching and Directing Techniques (Evanston, Ill.: Northwestern University Press, 1963), p. 5.

[73] Ibid., p. 41.

[74] Ibid., p. 27.

[75] Ibid., pp. 40, 41.

[76] Ibid., p. 24.

[77] Ibid., p. 23.

[78] Ibid., p. 24.

[79] Ibid., pp. 10, 11.

[80] Ibid., p. 15.

[81] Ibid., p. 17.

[82] Ibid., pp. 43, 44.

[83] Kristen Linklater, Freeing the Natural Voice (New York: Drama Book Specialists, 1976), p. 2.

[84] Ibid., p. 174.

[85] Ibid., p. 12.

[86] Ibid., p. 14.

[87] Ibid., p. 185.

[88] Ibid., p. 186.

[89] Ibid., p. 187.

[90] Ibid.

[91] Spolin, p. 109.

BIBLIOGRAPHY

Part I

Books

Bryden, M. P. Laterality: Functional Asymmetry in the Intact Brain. New York: Academic Press, 1982.

Eckman and Friesen. Unmasking The Face. New York: Prentice Hall, 1975.

'Gallwey, W. Timothy. The Inner Game of Tennis. New York: Random House, 1974.

Gazzaniga, M.S. and LeDoux, J. E. The Integrated Mind. New York and London: Plenum Press, 1978.

Jakobson, Roman. Brain and Language: Cerebral Hemispheres and Linguistic Structure in Mutual Light. Columbus, Ohio: Slavica Publishers, 1980.

Kinsbourne, Marcel, ed. Asymmetrical Functions of the Brain. Cambridge: Cambridge University Press, 1978.

Springer, Sally and Deutch, Georg. Left Brain, Right Brain. San Francisco: W. H. Freeman and Co.,1981.

Articles

Beaumont, J. G. "Split Brain Studies and the Duality of Consciousness." Aspects of Consciousness, Vol. 2, Underwood and Stevens, eds. New York: Academic Press, 1981.

Borod, Joan. "Facedness and Emotion Related to Lateral Dominance, Sex and Expression Type." Neuropsychologia, 18 (1980) 237-41.

Cambell, Ruth. "Left Hander's Smiles: Asymmetries in the Projection of Posed Faces." Cortex, 15 (1979), 571-579.

Chemtob, Claude M. "Paradoxical Complementarity in the Aesthetic Preferences of the Cerebral Hemispheres: An Exploratory Study." Perceptual and Motor Skills, 48 (1969), 799-806.

Cicone et al. "Sensitivity to Emotional Expressions and Situations in Organic Patients." Cortex, 16 (1978), 145-158.

Cohen, R. and S. Kelter. "Cognitive Impairment of Aphasics in a Colour-to-Picture Matching Task." Cortex, 15 (1979), 235-245.

Curtiss, Deborah. Brain Hemispheres and Art: An Annotated Bibliography. Unpublished dissertation. Philadelphia College of Art, 1982.

Dekosky et al. "Recognition and Discrimination of Emotional Faces and Pictures." Brain and Language, 9 (1980), 206-214.

Dimond, S. J. "Performance By Split-Brain Human on Lateralized Vigilance Tasks." Cortex, 15 (1979), 43-50.

Ellenberg, L. and R. W. Sperry. "Capacity for Holding Sustained Attention Following Commissurotomy." Cortex, 15 (1979), 421-438.

Heilman et al. "Right Hemisphere Dominance for Mediation Cerebral Activation" Neuropsychologia, 17 (1979), 311-315.

Hellige et al. "Effects of Concurrent ... Visual Field." Journal of Experimental Psychology: Human Perception and Performance, 2 (1976), 210-221.

Hellige et al. "Information Processing in the Cerebral Hemispheres: Selective Hemisphere Activation and Capacity Limitations." Journal of Experimental Psychology: General, 108 (1979), 251-79.

Kent, R. D. and John C. Rosenbek. "Prosodic Disturbance and Neurologic Lesions." Brain and Language, 15 (1982), 259-91.

Landis et al. "Dissociated Awareness of Manual Performance on Two Different Visual Associative Tasks: A 'Split-Brain' Phenomenon in Normal Subjects." Cortex, 17 (1981), 435-440.

LeDoux et al. "A Divided Mind: Observations on the Conscious Properties of the Separated Hemispheres." Annals of Neurology, 2 Nov., 1977, pp. 417-21.

Lehmkuhl, G, and K. Poeck. "A Disturbance in the Conceptual Organization of Actions in Patients with Ideational Apraxia." Cortex, 17 (1981), 153-8.

Ley, R. G. and M. P. Bryden. "Consciousness, Emotion and the Right Hemisphere." Aspects of Consciousness, Vol. 2, Underwood and Stevens, eds. New York: Academic Press, 1981.

Ley, R. G. and M. P. Bryden. "Hemispheric Differences in Processing Emotions and Faces." Brain and Language, 7 (1979), 127-138.

Marin, Oscar S. M. "Neurological Aspects of Music Perception and Performance." Unpublished article.

Olf, Julian. "Acting and Being: Some Thoughts about Metaphysics and Modern Performance Theory." Theater Journal, March, 1981, pp. 34-45.

Poizner et al. "Cerebral Asymmetry for American Sign Language: The Effect of Moving Stimuli." Brain and Laguage, [get rest of citation]

Risse, G. L. and M. S. Gazzaniga. "Well-Kept Secrets of the Right Hemisphere: A Carotid Amytal Study of Restricted Memory Transfer." Neurology, 28 Sept. 1978, pp.950-3.

Ross, Elliott et al. in Archives of Neurology:
a. "Dominant Language Functions of the Right Hemisphere? Prosody and Emotional Gesturing." 36 (1979), 144-48.
b. "The Aprosodias: Functional-Anatomic Organization of the Affective Components of Language in the Right Hemisphere." 38 (1981), 561-69.
c. "How the Brain Integrates Affective and Propositional Language into a Unified Behavioral Function: Hypothesis Based on Clinical Evidence." 38 (1981), 745-48.

Ross, P. and G. Turkewitz. "Individual Differences in Cerebral Asymmetries for Facial Recognition." Cortex, 17 (1981). 199-214.

Sackheim, Harold. "Lateral Asymmetry in the Intensity of Emotion." Neuropsychlogia, 16 (1978), 473-81.

Sackheim, H. and R. Gur. "Asymmetry in Facial Expressions." Science, August, 1979, pp. 834-6.

Sackheim et al. "Emotions are Expressed More Intensely on the Left Side of the Face." Science, October, 1978, pp. 434-5.

Schwartz et al. "Dissociations of Language Function in Dementia: A Case Study." Brain and Language, 7 (1979), 277-306.

Shotter, John. "Consciousness, Self-Consciousness, Inner Games and Alternate Realities." Aspects of Consciousness, Vol. 3, Underwood and Stevens, eds. New York: Academic Press, 1982.

Strauss, E. and M. Moscovitch. "Perception of Facial Expression." Brain and Language, 13 (1981), 308-332.

Varney, N. R. "Pantomime Recognition in Aphasia: Implications for a Concept of Asymbolia." Brain and Language, 15 (1982), 32-39.

Weintraub, S. "Disturbances in Prosody." Archives of Neurology, 38 (1981), 771-4.

Part II & III

Brecht, Bertolt. Brecht on Theater: The Development of an Aesthetic, ed. and trans. John Willett. New York: Hill and Wang, 1964.

Grotowski, Jerzy. Towards a Poor Theater. New York: Simon & Schuster/Touchstone, 1968.

Linklater, Kristen. Freeing the Natural Voice. New York: Drama Book Specialists, 1976.

Moore, Sonia. The Stanislavski System: The Professional Training of An Actor. New York: Penguin Books, 1976.

Spolin, Viola. Improvisation for the Theater: A Handbook of Teaching and Directing Techniques. Evanston, Ill.: Northwestern University Press, 1963.

Stanislavski, Constantin. An Actor Prepares, trans. Elizabeth Reynolds Hapgood. New York: Theater Arts Books, 1936.